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Application of Coordinated Management Model Jointly with Economic Agents

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Abstract

In the modern conception of economic thought, competition is one of the basic conditions for the functioning of a market economy. Nevertheless, in today's unstable market environment, competition is not effective. In this context, we believe that cooperation is a factor in ensuring the stability of the economic system. In this context, cooperation is a factor in ensuring the stability of the economic system. In this connection, the article considers the role of competition in development of society and necessity of its transition to a new paradigm of doing business in the rapidly changing conditions of external environment. A mathematical model of coordinated management has been used in order to determine the possible benefits of cooperation between partners in the markets for goods and services. The results of model research are presented from the standpoint of active system theory, and the model was obtained with the condition of perfect matching, corresponding with manufacturers' cooperation. The goal of the research is the study of competitive model of national economy functioning and the identification of promising trends in business activity of economic subjects on the basis of the model of cooperation. The aim of the study is to examine competition and cooperation as driving force in the development of economic actors and to substantiate the role of each at different stages of their functioning. In this respect, the paper identifies the following objectives: to examine the role of competition in the development of business environment in the transition to a new paradigm of doing business; to identify the relevance of competition and co-operation at different stages of the development of the external environment in a rapidly changing environment; to determine the possible benefits of cooperation between partners in goods and services markets using a mathematical model of coordinated management. As a result of solving the above objectives on the basis of the theory of active systems, a model with a perfect matching condition, which corresponds to the cooperation of producers, has been obtained. A proof base has been obtained that by using the potential of cooperation, economic subjects' function under conditions of maximum profit.

Keywords: Competition, Cooperation, Economic Subjects, Manufacture, Resources, Products

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1. INTRODUCTION

At the current functioning stage, the global economy is facing several challenges, such as the COVID-19 pandemic, the geopolitical situation, and the growing global financial and economic crisis. Today, the world is searching for new ways and mechanisms for effective functioning in a rapidly changing environment.

One of the most important development factors in economy on micro- and macro levels until recently has remained the competitiveness, and rivalry between economic agents to attract and use production factors, improving the results of economic activities, and gain influence in markets.

This rivalry is called competitive struggle or competition in connection with its critical role and functions in economy and society has long been the subject of research of economists. Etymologically, the word "competition" refers to Latin competition, meaning clash, contest. Competition refers to the social form of collision between subjects of market economy in the process of implementing their economic interests (Kuznetsova, 2012). Almost all economic schools considered various aspects related to competition. Up to the present time, it has been believed that competition is the only way to identify the most effective agents of economic relations and, therefore, the development of the economy.

Originally, strategy was understood as "the science of war" or the art of constructing a scheme of warfare that allows the warlord to ensure total victory through the efficient use of limited combat resources. In this context, "competition" or "rivalry" is closely related to the concept of "strategy". Therefore, in academic research, the notion of competition is often seen as a central element of strategy, which is combined into a concept such as "competitive behavior strategy" (Zhangaliyeva, 2017).

The realization of any chosen strategy by economic actors means their pursuit of personal goals and the creation of conditions and benefits for the positive socio-economic development of society. A. Smith saw such a situation as the 'invisible hand of the market', in which the choice by the subjects of social exchange of any of their chosen strategies leads to the development of social relations in the long or short term (Kishigin, 2022).

In formulating their development strategies, business structures always face a choice - either to pursue a policy based on competition or on the possibility of mutually beneficial cooperation. This choice is based, on the one hand, on the protection of economic, social, political and other interests of the actors and, on the other hand, the availability and possibility of realizing their competitive advantages.

Under competition, ownership of assets is used by actors as counteracting factors in competition, while under cooperation, on the contrary, it is combined, creating infrastructural links that enhance positive synergies in the activities of actors of socio-economic development of society and the state.

Research questions:

1) Is competition effective as a driving force for the development of society and the state in the current context?

2) Is cooperation as a form of interaction between actors of socio-economic

development effective?

3) What are the benefits of cooperation for business development?

In our view, the answers to these questions will allow us to address a number of future challenges aimed at forming the basis for the development of economic actors in the context of uncertainty in global markets.

2. LITERATURE REVIEW

M. Porter (1989) made a significant contribution to the development of competition theory. He believed that competitive actors in forming socio-economic development strategies through their competitive advantages could win in the short term and free the market from outsiders in the medium and long term.

According to Fatkhutdinov (2002), competition should be understood as "the process of an entity managing its competitive advantage to win or achieve other objectives against competitors for the satisfaction of objective and subjective needs under the law or in the natural environment".

The most important conclusion of these views on these aspects is that the notion of competition outside social relations loses all meaning: competition is always a product of social relations, the level of development of which reflects the development of the institutional environment shaped by society and the state in the process of realizing and protecting their interests.

A separate area of research is the study of competitive struggle as a process by which the subjects of competitive relations solve complex, multi-level socio-economic conflicts aimed at harmonizing their interests. In this sense, the competitive struggle is one of the ways of solving the conflict between the subjects of social exchange.

Of course, the idea of exploring different strategies for socio-economic development of society is not new, but understanding the nature of its choices can enable a transition from spontaneous strategic planning based on trial and error to the development of scientifically based methods for building social relations. In this context, the study of the two strands of development strategies - competition and cooperation - two key complementary strategies for the socio-economic development of society and the state, seems important.

The effectiveness of cooperation at certain stages of development of society or groups of people can also be considered within the spiral dynamic's theory, particularly, in Frederic Laloux (2014) monograph "Reinventing organizations". It has proved the effectiveness of cooperation between social group members in achieving a common goal and personal interests.

3. METHODOLOGY

At this stage, the goals of competition and cooperation research for different stakeholders (consumers, producers, states) and the nature of understanding the influence of these terms on the behavior of market participants change. As a result, there are many problems of terminological, methodological and instrumental nature in solving the problems of studying competition and cooperation and related tasks.

Complexity, synergy, considering different aspects of the problem, including the characteristics and dynamics of economic factors, involves the need to study the problem not by the mechanical union of the results of various studies, and consider it at the methodological level, involving the definition of a system of interdependent goals and focus on them, the structuring of the object and subject of research, the development and integration of a system of methods.

Thus, three groups of methods were used in the study:

- empirical methods, such as comparison, description, observation;
- general logical methods - analysis and synthesis, induction and deduction, generalization, analogy;
- methods of systematization of scientific knowledge, on the basis of which the effectiveness of cooperation as a driver of development of society and business structures was investigated.

The mathematical models have been investigated in terms of active systems theory and organizational management theory. In further research, methods of game theory with opposing interests can be applied.

The theory of active systems studies socio-economic or organizational systems where the main elements are people. The principle of coordinated management in the theory of active systems solves the problems of optimal management of a socio-economic or organizational system. The mathematical models have been investigated in terms of active systems theory and organizational management theory. The basic idea of the principle of coordinated management is to find a state of the system where the interests of all elements of the system are taken into account. The management of the system aims to produce control actions that lead to coordinated solutions to the challenges faced by the system. When studying a socio-economic system, a game-theoretic approach is used. For example, consider a system where all participants aim to minimize costs when purchasing resources. Solving the problem without applying the principle of coordinated management leads to the fact that the participants with the lowest costs have the highest priority. In this case, the participants in the system with the highest costs will not be satisfied with the solution. Applying the principle of coordinated control, the following steps will be carried out:

- constructing a dual model to the original mathematical model;
- construction of the coordinated management conditions.

The condition of consistent management will allow taking into account the interests of all participants of the system. As a result of solving the problem we will get the agreed plans (strategies).

In further research, methods of game theory with opposing interests can be applied. A similar solution to the coordinated plans can be obtained by applying game theory with opposing interests.

4. FINDINGS AND DISCUSSION

In the foreseeable future, the integrity of the group members based on cooperation can lead to fundamental changes in the functioning and interaction between the subjects of socio-economic development of society and the state.

The development of business structures based on integrity and cooperation, using the example of teal companies as the most effective form of interaction between its participants under conditions of global uncertainty, was examined in the work of domestic scholars (Tymbayeva et al., 2022)

Based on figure 1, at a certain stage of society's development, the competitive model of the market economy had its relevance and efficiency in economic relations. Therefore, competition as a business development concept was formed and developed in the works of representatives of the classical economic school, which is still actively used today.

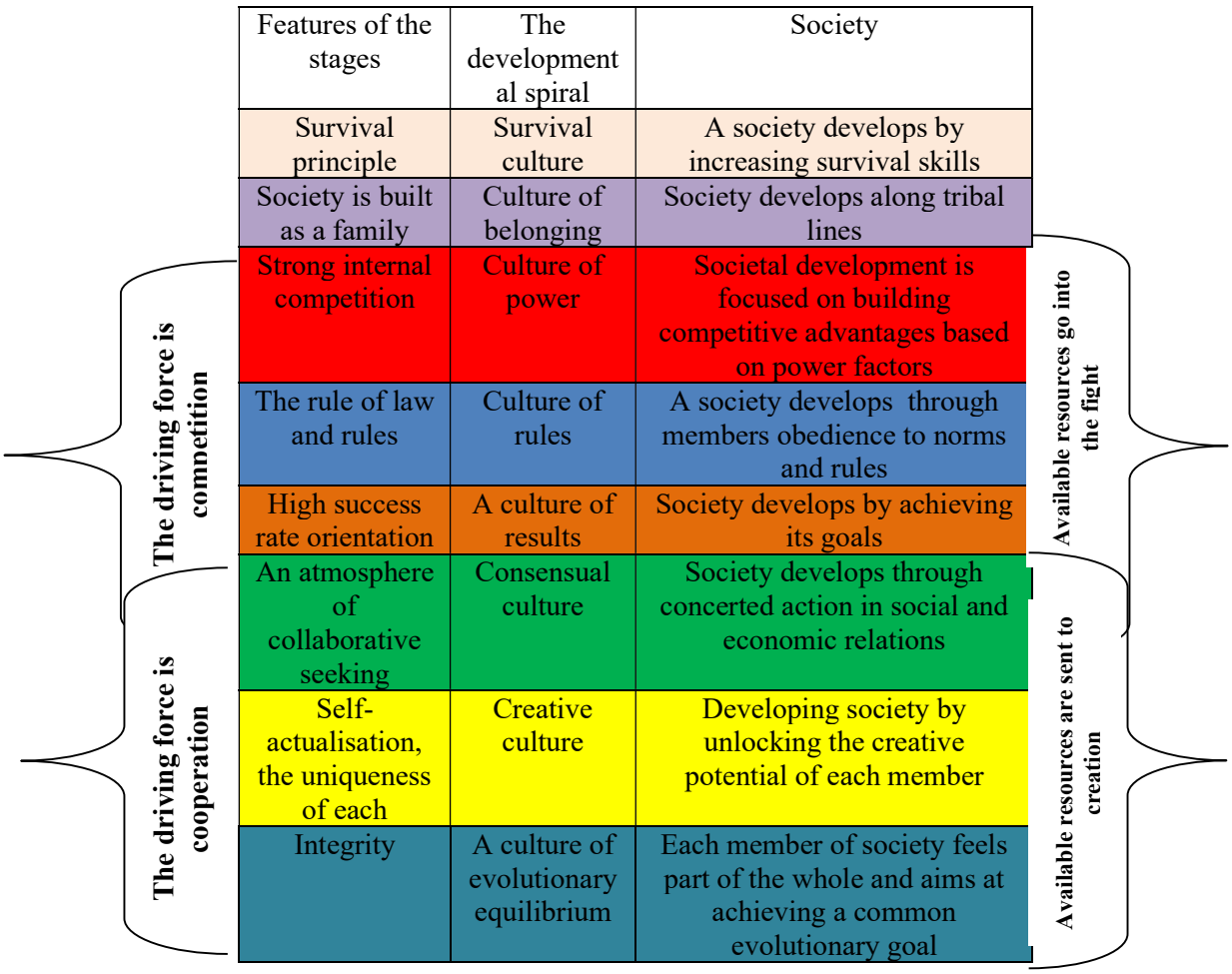

FIGURE 1. Competition and cooperation at different stages of social development
Note: Compiled by authors based on (Tymbayeva et al., 2022)

Some aspects of competition have been considered by virtually all schools of economics and, until today, competition is considered to be the only way of identifying the most efficient actors in economic relations, and thus of developing the economy.

At a certain stage of economic and industrial development a competitive model of economic relations in the market economy had its relevance, effectiveness. It is worth noting that competition as a concept of business development has been formed and

developed in papers by representatives of classical economic school, which are actively used nowadays.

However, today in the conditions of transition to the innovative stage of development of society with the principles of human capital development, competition shows its limitations and inefficiencies. Following are factors in reducing the role of competition:

- the quality and speed of innovation processes (free flow of information) are slowing down in terms of competition because this model is based on isolation;
- high competition rate and constant tension in the struggle against rivals have unhealthy mental and physical side effects for people, putting them into a stressful state;
- competition often means loss in billions of dollars of manufactured products for those companies that did not survive the competition;
- mass production becomes unnecessary and unprofitable in an environment of limited resources, requiring ever-expanding demand and consumption of goods and services;
- "competitive" model ceases to be effective in terms of limitations and exhaustion of resources in the absence of "new lands".

As opposed to competition, more and more scientists in the world have come to the opinion that cooperation has more benefits for business development. For example, the eastern model of business management, based on cooperation. An example of "Japanese economic miracle" convincingly shows that the business is based on cooperation, and can be more successful than those built on sharp rivalry. Competition and cooperation, as distinct underlying strategies and their interaction within the bottleneck strategy, have received considerable attention in the works of several authors (Douglas et.al., 2017).

Cooperation, in turn, is seen in contemporary scientific research as a form of interaction between socio-economic development actors and a social strategy (Akulich & Bolikova, 2018).

However, the analysis of definitions of cooperation highlights several key features of the concept, namely:

- the multiplicity of participants in the process;
- the existence of a common goal reflecting the interests of these participants;
- the implementation of joint activities based on mutual understanding and trust;
- the use of formal interaction algorithms, as well as informal limitations that reduce the risks of uncertainty when choosing a cooperation strategy.

It should be noted that almost all studies on the relationship between the actors of socio-economic development of society and the state have suggested that in real interaction, the actors of social relations do not share the concepts of competition and cooperation.

At the same time, concepts such as "cooperation between competing entities", "co-competition", and "competitive partnership" were formed, the reasons for which were considered to be the similarity of the desired objectives and/or the means of achieving them (Batuyeva, 2017; Kishigin, 2018; Tereshin, 2015).

Cooperation takes place where participants of interaction have a common goal and common means of achieving this goal. In our opinion, this form of interaction between the participants reflects the stage of "result culture" in Figure 1. Society at this stage is at the stage of transition from competition as an engine to cooperation.

Rivalry arises when people who interact have individual goals or diverge in the means

to achieve them. Therefore, researchers have come to see differences of interest as a major source of the more serious forms of competition.

This approach to justify the choice of market relations participants between competition and cooperation is debatable. The subjects of competitive struggle always have different interests, so the choice of instruments of social relations is determined by the ratio of costs and revenues that the parties will eventually receive in the process of implementing their alternative interaction options: competition or cooperation.

These concepts have been considered by researchers from the position of institutionalism, where the relationships are based on the relations to infrastructural links between the subjects making their choices. According to Pashina (2015) the institutional environment is formed by market and government instruments regulating economic relations.

At the same time, the basis for constructing infrastructural links is the possibility of sharing the resources possessed by the subjects of socio-economic interaction. As a result of the joint use of resources by economic entities, new competitive advantages are formed.

However, from an institutional point of view, a positive multiplier effect can be seen in a cooperation strategy based on the interaction of classical market mechanisms aimed at reducing production costs and institutional mechanisms.

It should also be noted that there are situations in which a decrease in production costs can lead to an increase in transaction costs and conversely, a decrease in transaction costs can lead to an increase in production costs. In this sense, an analysis of the total costs of forming and changing the system of infrastructure links of social relations is necessary. In general, infrastructural linkages break down when there is competition. However, when there is cooperation, they improve, forming various synergies between actors using their specific assets.

In exploring the concept of strategy for socio-economic development of social relations, it should be emphasized that any strategy determines the choice of combinations (alternatives) in various activities between subjects of social exchanges.

In general, it can be argued that cooperation between actors is linked to mechanisms to harmonize their interests. At the same time, the desire of the actors to harmonize their interests forms new forms and mechanisms of cooperation. On the contrary, the lack of such desire leads to limitation of mutually beneficial ties.

Today, we can state the fact that "competitive" model that appeared in the era of primitive accumulation of capital comes to its logical conclusion, and there is a transition to innovative model of development of a society based on the energy-efficient, resource-efficient green economy. Competition loses its effectiveness in the evolutionary transition from industrial development (productive capital) to the innovation stage of development of society, which is based on the development of human capital.

In its turn the development of innovation, involves two tasks:

- innovations give impetus to the development of human capital and science – as stimulating function;
- innovations that also carry the reproductive function are the source of economic growth and change the structure of gross domestic product in favor of its higher-tech.

Thus, innovation in the context of limited resources is a renewable resource, which

forms a great potential for the development of the economy.

Below are the possible benefits of joint activities of partners in the market:

- the quality and speed of innovative processes directly depend on the degree of cooperation at all levels;
- creativity and innovations are impossible without the free flow of information and friendly atmosphere — the inherent attributes of cooperation;
- through cooperation and sharing of resources, the company can enter new markets;
- the use of interchangeable parts, approval of standards by business entities;
- partnerships with suppliers, contractors and consumers are often the key to business survival and, indeed, its profitability and improvement of production processes and services;
- the approach, based on the high level of cooperation involves long-term relationships, and a willingness to compromise, perhaps at the expense of short-term profit, which form stable relationships;
- due to the partnership, beneficial interaction and cooperation, atmosphere, employees are less prone to stress, which have a positive impact on the mental, mental and physical health;
- cooperation and other models of pro-social/unselfish behaviors tend to have positive economic and the social impact, increasing social responsibility of business.

Furthermore, there is evidence that cooperation creates a kind of "runner's high" effect. Although this study is not conclusive, it is quite promising. People who exercise regularly, "cooperative" and people who always come to the aid of others are also experiencing the "runner's high", which can be better described as calmness or a sense of freedom from stress. As the researchers note, co-operation, not competition, is preferred.

In addition, people who develop the attitude of cooperation feel better control over their lives and do not live for approval from others. They usually feel good. This contrasts sharply with the ongoing work "to the point of exhaustion" of competitive person (Burkov et al., 2004).

Thus, at this stage of development of economy and society, the obvious alternative to competition is cooperation. The accuracy of this provision can be traced by means of mathematical tools.

Consider the market of producers of productions of various types. Let there be n producers, m products. The production capacity of each manufacturer is known for each product, and market (consumer) demand for each type of product. Production companies have the value (r) (coefficient) describing the production expenditures per unit for each product type.

As known, the aim of producers is to minimize the expenditures during the manufacturing of the production (r) and the complete satisfaction of consumer demand, but not exceeding it, taken into account its production capacity.

The mathematical model of the described task is as follows:

$$F = \sum_{i=1}^{n\Sigma} \sum_{j=1}^{m\Sigma} r_{ij} x_{ij} \rightarrow min\ , \qquad (1)$$

with restrictions

$$\sum_{i=1}^{n} x_{ij} \geq B_j, \quad j = \overline{1,m}, \tag{2}$$

$$x_{ij} \leq a_{ij}, \; i = \overline{1,n}, j = \overline{1,m}, \tag{3}$$

$$x_{ij} \geq 0, \; i = \overline{1,n}, j = \overline{1,m}, \tag{4}$$

Where:

x_{ij} - the number of releasing products of j type by i manufacture;

r_{ij} - expenditures of i manufacturer per unit production of j type;

B_j - the demand for the product of type j;

a_{ij} - production capacity of i manufacturer product type of j.

Give explanations to the model equations (1-4):

(1) - the objective function of the problem, cost minimization;

(2) - the limit on the demand of products of each species, the volume of production of j type does not exceed its demand on the market;

(3) - the production volume does not exceed the production capacity of the manufacturer for each product.

The described situation in the market of manufacturers and the mathematical model represents the competition between manufacturers. Each manufacturer strives to produce products under its production capacity. The solution to the problem depends on the values r_{ij}.

For example, consider the solution of the problem for one product, may $j = 1$.

Sort $\{r_{i1}\}$, $i = \overline{1,n}$, ascending $r_{11} \leq r_{21} \leq \ldots \leq r_{n1}$, then the following expression takes place

$$\sum_{i=1}^{l} a_{i1} \leq B_1 > \sum_{i=1}^{l+1} a_{i1}. \tag{5}$$

It means

$$x_{i1} = \begin{cases} a_{i1}, & i = \overline{1,l-1}, \\ B_1 - \sum_{i=1}^{l-1} a_{i1}, & i = l, \\ 0, & i = \overline{l+1,m}. \end{cases} \tag{6}$$

The same solution will be for other types of products. Therefore, producers with the lowest values r_{ij} will work at full capacity. Some – not at full, while the rest of the

manufacturers with the highest value r_{ij} will not be producing a particular product, although their products can be demanded.

Now consider the situation on the market in the event of the cooperation of the manufacturers. There will be conducted a study of the model (1-4) from the standpoint of the theory of active systems (Novikov, 2005). To solve the problem (1-4), consider the dual to the task by defining the dual variables $p_j \geq 0$, $q_{ij} \geq 0$ ($i = \overline{1,n}, j = \overline{1,m}$):

$$W = -\sum_{i=1}^{n}\sum_{j=1}^{m} a_{ij}q_{ij} + \sum_{j=1}^{m} B_j p_j \to max, \quad (7)$$

with restrictions

$$p_j - q_{ij} \leq r_{ij},\ i = \overline{1,n}, j = \overline{1,m}. \quad (8)$$

Write the ratio of "complementary slackness":

$$\forall i, j: \quad (p_j - q_{ij} - r_{ij})x_{ij} = o \quad (9)$$

From conditions (7) in the optimal solution of the dual problem are $q_{ij}^o = max(0, p_j^o - r_{ij})$, для $i = \overline{1,n},\ j = \overline{1,m}$.

Condition (7) can be written in the following form:

$$\left[\max_j(p_j^o - r_{ij}) - (p_j - r_{ij})\right] x_{ij} = 0,\ i = \overline{1,n},\ j = \overline{1,m}$$

Thus, under the law, open governance have the task of coordinated management the following:

$$F = \sum_{i=1}^{n\Sigma}\sum_{j=1}^{m\Sigma} r_{ij}x_{ij} \to min\ , \quad (10)$$

with restrictions

$$\sum_{i=1}^{n} x_{ij} \geq B_j,\ \ j = \overline{1,m}, \quad (11)$$

$$x_{ij} \leq a_{ij},\ i = \overline{1,n}, j = \overline{1,m}, \quad (12)$$

$$\left[\max_j(p_j - r_{ij}) - (p_j - r_{ij})\right] x_{ij} = 0,\ i = \overline{1,n},\ j = \overline{1,m}, \quad (13)$$

$$x_{ij} \geq 0,\ i = \overline{1,n}, j = \overline{1,m}, \quad (14)$$

Where the conditions (14) are the conditions of a perfect matching.

The result of solving the problem (10-14) is determined by what type of product it is preferable to produce by the manufacturer to achieve maximum profitability. In this case, each manufacturer will operate in circumstances where it's normal profit will be at its maximum value. Therefore, the problem (10-14) with the condition of perfect matching defines the cooperation of the manufacturers.

5. CONCLUSIONS

Thus, the model of coordinated control with the condition "complementary slackness" demonstrates the effectiveness of cooperation in the new conditions of functioning of the world economy, which contributes to the dynamic development of production and leads to the well-being of society. The study concludes that, at this stage of society's development, the competitive model is losing its relevance and effectiveness in economic relations. Because development based on competition leads to a loss of scarce resources. Moreover, cooperation, through the sharing of resources and the effective interaction of all actors, creates the conditions for functioning at higher levels of socio-economic development of society, achieving evolutionary goals. In the considered socio-economic system, the main participants are producers of different types of products. A mathematical model of the task, including the target function and the constraint conditions, is constructed. The task is to determine the optimal production plan. In the study of this system a game-theoretic approach is applied. All participants-producers are interested in production and their functioning depends on the costs of production. In the study of this system from the perspective of the theory of active systems, the governing body applies two principles:

1) open control;

2) coordinated control.

With the first principle, the solution is simple. The participant obtains the highest production plan with the lowest costs. With the second principle, a game-theoretic approach is applied. The condition of coordinated management is constructed through the construction of a dual problem in the initial model. The fulfillment of the condition of coordinated planning (management) leads optimal management, when the producers receive production plans in accordance with their interests. Subsequent actions will be collaborative in nature.

As the model has shown, cooperation is a more effective driver of social development than competition. In the future, it would be possible to investigate the degree of influence of cooperation on each of the stages of socio-economic system development, such as consensual culture, creative culture, and a culture of evolutionary equilibrium.

In general, for Kazakhstan at the present stage in the rapidly changing landscape of the global economy, there is a need to switch to more effective drivers of economic capacity building, such as cooperation.

Small and medium-sized businesses find it difficult to face the challenges of today's world when their operating environment is changing rapidly. Therefore, the potential for cooperation must be exercised in such a way that business entities, through elements of

cooperation, complement and support the viability of the company as well as to achieve their goals. Based on cooperation, they could share risks and develop adequate measures for efficient functioning.

Business structures, relying on cooperation as a driving force, can evolve to higher levels along the development spiral, which is the main objective of the functioning of any economic entity in the transition to a post-industrial economy, where the creating of human capital is an important link.

References

1. Akulich, M.M., & Bolikova, D.E. (2018) The Cooperation of Competing Actors as a Social Strategy [Sotrudnichestvo sub"yektov kak sotsial'naya strategiya], *Teoriya i praktika sotsial'nogo razvitiya. 7*, 19–23. https://doi.org/10.24158/tipor.2018.7.2 (in Russ.).
2. Batuyeva, T.B. (2017). Interregional cooperation based on competition as a factor in the innovative development of the region. State and municipal administration [Mezhregional'naya kooperatsiya na osnove sokonkurentsii kak faktor innovatsionnogo razvitiya regiona. Gosudarstvennoye i munitsipal'noye upravleniye]. *Uchenyye zapiski*, *4*, 80–84. https://doi.org/10.22394/2079-1690-2017-1-4-80-84 (in Russ.).
3. Burkov, V. N., Ageev, I. A., Baranchikov, E. A., Kryukov, S. V., & Semenov, P. I. (2004). *Mechanisms of corporate governance* [Mekhanizmy korporativnogo upravleniya]. Moscow, IPU RAN. (in Russ.).
4. Douglas, P. &, Eisenhardt, K.M. (2017). How firms navigate cooperation and competition in nascent ecosystems. *Strategic Management Journal, 1*(30), 56-76. https://doi.org/10.1002/smj.2750.
5. Fatkhutdinov, R.A. (2002). *Competitiveness of an organization in a crisis: economics, marketing, management* [Konkurentosposobnost' organizatsiy v usloviyakh politiki:ekonomika, marketing, menedzhment]. Moscow, Marketing. (in Russ.).
6. Kichigin, O.E. (2018). On the issue of solving the problem of harmonizing the interests of the discussion: an institutional approach [K voprosu o reshenii problemy garmonizatsii interesov obsuzhdeniya: institutsionnyy podkhod. Gosudarstvennoye upravleniye]. *Elektronnyy vestnik*, *70,* 220–245. https://doi.org/10.24411/2070-1381-2018-00091 (in Russ.).
7. Kichigin, O.E. (2022). Competition and cooperation: two strategies for the socio-economic development of society and the state (institutional approach). Public administration [Konkurentsiya i sotrudnichestvo: dve strategii sotsial'no-ekonomicheskogo razvitiya obshchestva i gosudarstva (institutsional'nyy podkhod)]. *Gosudarstvennoye upravleniye. Elektronnyy vestnik*, *91,* 66-82. https://doi.org/10.24412/2070-1381-2022-91-66-82 (in Russ.).
8. Kuznetsova, E.I. (2012). The Development of competitive relations and economic strategy of the state. [Razvitiye konkurentnykh otnosheniy i ekonomicheskaya strategiya gosudarstva]. *Yuniti-Dana. Zakon i pravo,* 384. (in Russ).

9. Laloux, F. (2014). *Reinventing organizations*. *A Guide to Creating Organizations. Inspired by the Next Stage of Human Consciousness.* Published by Nelson Parker. http://dx.doi.org/10.5590/JOSC.2016.08.1.06
10. Novikov, D.A. (2005). *The theory of control of organizational systems.* [Teoriya upravleniya organizatsionnymi sistemami]. Moscow, MPSI. (in Russ.).
11. Pashina, M.A. (2015). The study of modern management systems for the rationality of entrepreneurial structures [Issledovaniye sovremennykh sistem upravleniya ratsional'nost'yu predprinimatel'skikh struktur]. *Ekonomika i predprinimatel'stvo*, *5*(58), 1107–1110. (in Russ.).
12. Porter, M.E. (1989). From Competitive Advantage to Corporate Strategy. Readings in Strategic Management. *ed. by D. Asch, C. Bowman. London: Palgrave*, 234–255. https://doi.org/10.1007/978-1-349-20317-8_17
13. Tereshin, A.V. (2015). Integration of development and development in entrepreneurship [Integratsiya osvoyeniya i razvitiya v predprinimatel'stve]. *ETAP: ekonomicheskaya teoriya, analiz i praktika*, *5*, 127–136. (in Russ.).
14. Tymbayeva, ZH.M, Kazhmuratova, A.K., Niyetalina, G.K., & Tankova, E. (2022). Teal companies as an effective form of organization in a turbulent world economy [Biryuzovyye kompanii kak effektivnaya forma organizatsii v usloviyakh turbulentnosti mirovoy ekonomiki]. *Vestnik universiteta Turan*, *1,* 58-64. https://doi.org/10.46914/1562-2959-2022-1-1-58-64 (in Russ.).
15. Zhangaliyeva, E.S. (2017). Features of the consumer market on the competitive characteristics of the enterprise [Osobennosti potrebitel'skogo rynka na konkurentnuyu kharakteristiku predpriyatiya]. *Vestnik Saratovskogo sotsial'no-ekonomicheskogo universiteta, 3*(67), 48–51. (in Russ.).

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